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ABSTRACT

A study was conducted to enhance understanding of the role of sex in influencing beliefs about argumentative communication. Using a belief structure framework, the study investigated how males and females discriminate on beliefs about arguing. The study also explored whether trait argumentativeness influences biological sex in discriminating beliefs about arguing. One hundred thirty-eight subjects answered a questionnaire that elicited beliefs about arguing and a second questionnaire that indicated their level of trait argumentativeness. Beliefs obtained from the questionnaire were classified into eight categories previously identified as belief structures about arguing. Results indicated that sex alone is not a powerful discriminator of beliefs about arguing. Males and females differ little in their beliefs about arguing as a learning experience (cultivation), but do differ in their beliefs about arguing as an aggressive and hostile communication encounter (antagonism). In general, males tend to view arguing as a less hostile form of communication than do females. However, males and females high in trait argumentativeness do not differ in this belief about arguing. (Author/DF)

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DISCRIMINATING MALES AND FEMALES ON BELIEF STRUCTURES ABOUT ARGUING

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Abstract

This study sought to enhance understanding of the role of sex in influencing beliefs about argumentative communication. Utilizing a belief structure framework, this study investigated how males and females discriminate on beliefs about arguing. The study also explored whether trait argumentativeness influences biological sex in discriminating beliefs about arguing.

One hundred thirty-eight subjects elicited beliefs about arguing. Subjects level of trait argumentativeness was also obtained. Content analytic procedures were used to classify the obtained beliefs into a set of eight categories previously identified as belief structures about arguing.

Results indicated that sex alone is not a powerful discriminator of beliefs about arguing. When the level of an individual's trait argumentativeness is included, it enhances the separation between the sexes on beliefs about arguing. Males and females differ little in their beliefs about arguing as a learning experience (Cultivation), but do differ in their beliefs about arguing as an aggressive and hostile communication encounter (Antagonism). In general, males tend to view arguing as a less hostile and aggressive form of communication than do females. However, males and females high in trait argumentativeness do not differ in this belief about arguing.

DISCRIMINATING MALES AND FEMALES ON BELIEF STRUCTURES ABOUT ARGUING

Argumentative communication is a ubiquitous form of social interaction, found in interpersonal, small-group and public contexts. Recently, a psychological approach to understanding argumentative communication has been advanced by Infante and Rancer (1982). They define argumentativeness as a generally stable personality trait which predisposes an individual in communication situations to advocate positions on controversial issues and to attempt refutation of the positions which other people take on those issues. Argumentativeness has been differentiated conceptually and empirically from verbal aggressiveness, attacking a person's self-concept instead of his or her position on an issue (Infante & Rancer, 1982).

This psychological approach to studying arguing has focused on what it means to be argumentative with regard to individual motivation and perceptions, and how people respond to the person's argumentative behavior (Infante, 1981, 1982, 1983; Rancer & Infante, 1983; Infante, Trebing, Shepherd & Seeds (in press); Infante, Wall, Leap & Danielson, 1983). This emerging body of research has also revealed several differences in the communicative behavior of individuals who differ in this trait predisposition (Infante, 1981, 1982; Rancer & Infante, 1983; Infante, et al., in press; Infante, et al., 1983).

One area of concern to researchers attempting to understand arguing and argumentative communication from this psychological approach concerns the question of sex differences in argumentativeness. This is an area of concern to researchers because of the potential important consequences of one group of individuals being less argumentative than another. Infante (1983) suggests that on a global level, if a group argues less, then it has

less potential for achieving social influence. Schultz (1982) found that argumentative individuals in a group situation were selected as leaders more often than less argumentative members, and exerted a stronger influence on group decisions. Schultz and Anderson (1982) suggest that skill in argument is essential in the negotiating process. Johnson and Johnson (1979) have found arguing to be related to numerous favorable outcomes such as: a positive effect on learning due to stimulation and curiosity; improved accuracy in social perspective-taking which facilitates self-concept development and social intelligence; a reduction in ego-centric thinking; greater creativity; and enhanced problem-solving and decision-making ability.

Recent research exploring sex differences in argumentativeness has produced inconsistent findings. Rancer (1979) found that males were higher in trait argumentativeness than females. Infante (1982) found that males are significantly more argumentative than females. Schultz and Anderson (1982) administered the Argumentativeness Scale (Infante & Rancer, 1982) to a large group of individuals and found that females were consistently over-represented in the low argumentative tail of the distribution. While conceptually quite different from argumentativeness, contentiousness, one dimension of Communicator Style (Norton, 1978) has been investigated with regard to sex differences. Montgomery and Norton (1981) exploring sex differences and similarities in communicator style found that males and females did not differ significantly on contentiousness.

In an effort to better understand sex differences in argumentativeness, Rancer and Dierks-Stewart (in press) found that previous research classified individuals solely by biological sex when investigating differences in the trait predisposition. Noting a decade of research which points to the impact sex-role orientation has on a wide range of communication behaviors,

they sought to explore how sex and sex-role orientation influence trait argumentativeness. Results of their study indicated that males and females did not differ significantly on trait argumentativeness, but that individuals classified by sex-role orientation, regardless of biological sex, did differ. Individuals classified as Instrumental(Masculine) were significantly higher in trait argumentativeness than those classified as Expressive(Feminine), Androgynous or Undifferentiated. Further analyses revealed that feminine and undifferentiated individuals tend to avoid arguing, while masculine and androgynous individuals do not.

The contradictory findings of these studies make it difficult to assess the role of sex in influencing an individual's motivation to argue, their perceptions of arguing, and their actual argumentative behavior. In order to resolve these often confusing and contradictory findings, it was reasoned that a more profitable approach might be to study the beliefs that males and females have about arguing.

Two reasons are offered for this approach to understanding the role of sex in arguing. First, studies attempting to investigate the influence of sex and/or sex-role orientation on trait argumentativeness have produced conflicting findings. Some studies (Infante, 1982; Schultz & Anderson, 1982) found that males are more argumentative than females. Other studies (e.g., Rancer & Dierks-Stewart, in press) found no sex (biological) differences, but found differences in argumentativeness by sex-role orientation. It does not appear that further research along these lines will significantly clarify our understanding of the role of sex in arguing. A second reason for studying the beliefs that people have about arguing, rather than examining the trait predisposition alone, is that a framework already exists which could provide a valuable research direction. This

framework (Fishbein & Ajzen, 1975) maintains that a predisposition is controlled by the set of beliefs which the individual has learned to associate with the object of the predisposition. Since argumentativeness has been conceptualized as a predisposition to respond in a particular way, this framework seems appropriate to study the beliefs about arguing that contribute to the development of the predisposition.

According to this framework, additional insight into argumentativeness would be gained by determining the beliefs that people have about arguing. If beliefs control predispositions, insight into sex differences in argumentativeness should be achieved by determining the beliefs which differentiate males and females, and the beliefs which differentiate males and females who differ in trait argumentativeness. This research focus, of course, is consistent with the psychological perspective of the argumentativeness model and research.

A major undertaking in this effort to explore differences in the beliefs about arguing of males and females is to identify the beliefs that people have about arguing and argumentative communication. A recent study accomplished that task. Rancer, Baukus and Infante (1984) attempted to enhance our understanding of argumentativeness by determining the particular beliefs which differentiate high, moderate and low argumentative individuals. Subjects were asked to elicit beliefs they have about arguing and argumentative communication. Content analytic procedures were used to classify the beliefs into a set of categories identified as beliefs about arguing. Eight beliefs emerged: Hostility, Activity/Process, Control/Dominance, Conflict/Dissonance, Self-Image, Learning, Skill and Situational.

With a sound and novel theoretical framework to draw upon, and a set

of belief structures about arguing already developed, it was the purpose of this study to differentiate males and females on the beliefs about arguing in an effort to clarify and enhance our understanding of sex differences in argumentativeness. Specifically, this investigation asked the following research questions:

Q_1: How do males and females discriminate on beliefs about arguing?

Q_2: How do high argumentative males and females, and low argumentative males and females discriminate on beliefs about arguing.

This second research question asks whether trait argumentativeness adds additional influence to the sex factor in discriminating males and females on the beliefs they have about arguing.

METHOD

Subjects

Participants were 138 students enrolled in basic undergraduate communication courses at a small, Eastern college. The subjects participated in this study voluntarily, and received extra-credit toward their respective course. There were 81 females and 57 males represented in the sample.

Procedures

At the beginning of the semester, the Argumentativeness Scale (Infante & Rancer, 1982) was administered to the subjects. The scale has demonstrated reliability and validity through a series of studies during its development and subsequent usage (Infante & Rancer, 1982; Infante, 1981, 1982; Rancer & Infante, 1983; Rancer, Baukus & Infante, 1984).

Participants were classified into one of three groups on the basis of norms established for the scale (Infante & Rancer, 1982): high argumentatives ($ARG_{gt} > 13$), moderate argumentatives ($ARG_{gt} \leq 13, \geq -5$), and low argumentatives ($ARG_{gt} < -5$). The respective n's for the three

groups were 47, 53, and 38.

A second questionnaire was administered to participants about four weeks later. Participants were told that researchers were interested in learning more about people's feelings about engaging in argumentative communication. The questionnaire asked the participants to explain: "Why do you feel the way you do about arguing?" Participants were then given ten minutes to write their responses to the question.

Units of Analysis

The content provided by each participant was divided into sentences which were treated as the units of analysis for this investigation. Sentences were employed as the units of analysis because they are natural units of distinction made by the source. Each sentence was assumed to represent a perception about arguing provided by the participants.

A total of 483 units were produced by the 138 participants.

Assignation of Units of Analysis to Categories

Previous research (Rancer, Baukus & Infante, 1984) provided the researchers with a set of eight belief structure categories about arguing: Hostility, Activity/Process, Control/Dominance, Conflict/Dissonance, Self-Image, Learning, Skill and Situational. This study also provided a codebook which included examples of units assigned to each belief category, and a list of key descriptors for each category code.

The Hostility belief (category) is represented by beliefs about arguing where aggressiveness, combativeness and emotional intensity are highlighted in the communication act. The Activity/Process category is representative of the participants reference to statements concerning their affective response to arguing as an activity. The Control/Dominance category represents beliefs about arguing as a mechanism for controlling and/or dominating

another individual. In the Conflict/Dissonance category, participants beliefs were concerned with their perceptions of arguing as a communication event where social conflict is the most salient characteristic of the encounter.

The Self-Image category is representative of the participants reference to statements about argumentative communication's impact on their self-perception, on their adversary's self-perception, and on the meta-perceptions between adversaries. The Learning category is representative of the participants reference to statements reflecting their beliefs about arguing as a communication event where information acquisition and dissemination are the most salient characteristics. The Skill category represents participants beliefs concerning argumentative communication as a communication event where the display, or lack of, verbal and rhetorical skill is most evident.

The Situational category represented statements made by participants where their perceptions of arguing were inextricably bound to various situational factors such as aspects of the adversary (sex, status, relational), aspects of the environment (time, location, setting), aspects of the topic (salience, ego-involvement, relecance), or unspecified aspects of the topic.

The Hostility, Activity/Process, Control/Dominance, Conflict/Dissonance, Learning, and Skill belief categories allowed for dichotomous coding of both positive and negative beliefs for the units of analysis assigned to those categories. The coding for the Self-Image category allowed for four types of beliefs: beliefs that arguing enhances one's self-image, beliefs that arguing is threatening to one's self-image, personal statements concerning self-image not directly related to arguing, and one code for statements

where the participant perceives arguing as a threat to an adversary's self-image.

The Situational belief category also allowed for four types of beliefs to be coded in it. It contained codes for statements where the participant linked arguing to aspects of the adversary, environment, topic and unspecified situational aspects of argument.

All 483 units of analysis (sentences) obtained by the participants were coded into the aforementioned categories by a trained team of three coders who were aware of the general purpose of the study.

RESULTS

Reliability of the Argumentativeness Scale

Coefficient alpha was computed as a measure of the internal consistency of the Argumentativeness Scale. Coefficient alpha was .86 for the ARG_{ap} dimension, and .84 for the ARG_{av} dimension.

Coding Reliability

Three randomly selected subsets of questionnaires were used to assess the reliability of the coding procedure. Each subset consisted of seven questionnaires from subjects who represented the three levels of trait argumentativeness, high, moderate and low. Scotts (1955) pi formula was selected as the method of assessing reliability of coding because it accounts for chance co-occurences.[1] The pi values for each consistency test are: .69, .78, and .74 respectively. Considering the wide variance attributed to open-euded responses the consistency results obtained seemed adequate.

Tests of the Research Questions

In order to address the first research question, discriminant analysis was employed to differentiate subjects by sex across the eight

belief categories. For this analysis, subjects received a score on each of the belief structure categories. Each belief score was operationally defined as the number of times that a belief was elicited by the subject for that category regardless of valance. A stepwise selection procedure was used to identify a subset of the original beliefs that maximized the separation between the two groups defined by sex. The Wilks' lambda inclusion criterion was used to control the sequential entry of variables into the discriminant procedure. As summarized in Table 1, the canonical discriminate function did produce a significant root (χ^2=43.83, df=4, $p < .001$).

Table 1 about here

Although this function was statistically significant, the strength of the root is weak. The eigenvalue (.09582) indicates a low total amount of variance existing in the discriminating variables. The function produced a low correlation with the gender defined groups. The square of the canonical correlation (.087) provides an indication of the proportion of the variance in the discriminant function explained by the groups. Less than nine percent of the variance is accounted for, again indicating a relatively weak discriminant function. Finally, the Wilks' lambda is high (.9125) indicating that very little discriminating power is present in the variables that load on the function. Table 2 presents the beliefs that the model retained in the function.

Table 2 about here

The function predominately represents arguing perceived as a hostile communication event, and was subsequently labelled Antagonism. The function

coefficients represent the relative contribution of the belief structures to this function. The rank-ordered belief structures indicate that Hostility produces the most discriminating power to this function.

Examination of the gender group centroids (Table 3) indicate that considerable overlap exists between the two groups.

Table 3 about here

There is a significant, yet relatively small separation (.62 units) on the continuum provided by the discriminant function. Males apparently believe arguing is a less aggressive communication act than do females.

In sum, the results of this analysis indicate that sex alone is not a good discriminator of beliefs about arguing.

In order to see the combined effects of trait argumentativeness and sex on beliefs about arguing to address the second research question, four groups were defined in the following manner: Group 1=Low argumentative males; Group 2=high argumentative males; Group 3=low argumentative females; Group 4=high argumentative females.

Discriminant analysis was again used to see if the inclusion of trait argumentativeness enhanced the separation of the groups defined by sex. Utilizing the same stepwise reduced rank model procedure as in the first analysis, two functions were extracted. A summary of the discriminant functions is provided in Table 4.

Table 4 about here

The eigenvalue associated with the first function indicates that this function provides the greatest discriminating power. The squared canonical correlation (.36) indicates a great improvement in the power of this function

to discriminate among the groups. Prior to the extraction of functions, Wilks' lambda was .5604. This indicates that a considerable power exists in the beliefs to discriminate among the groups defined by sex and trait argumentativeness. The F-ratio's related to its Mahalanabis D^2 between group contrasts are presented in Table 5.

Table 5 about here

These statistics indicate that all groups were significantly different from each other with the exception of males and females high in trait argumentativeness. Table 6 presents the beliefs retained in the model.

Table 6 about here

Function I was primarily represented by the Learning belief, and was therefore labelled Cultivation. The second function was influenced by the Situational and Hostility beliefs and was labelled Antagonism. Table 7 provides the centroids for the four groups.

Table 7 about here

Examination of group centroids revealed that the Cultivation function provides a primary contrast to groups based on trait argumentativeness rather than sex. That is, with respect to the belief that arguing is a learning experience, there is very little difference between males and females. The greatest contrast on Cultivation is between high argumentative and low argumentative individuals regardless of sex. A slight separation was observed for low argumentative males and females on the Cultivation function

with low argumentative males viewing arguing as more of a learning experience than low argumentative females.

The Antagonism function provides a significant, yet weaker, separation among the four groups. This separation is primarily based on sex. Males tended to view "arguing as antagonism" differently from females. Males generally held the belief that arguing is a less hostile and aggressive form of communication than did females. However, males and females high in trait argumentativeness did not differ in this belief about arguing. Low argumentative males viewed arguing more antagonistically than did high argumentative males.

DISCUSSION

Previous research attempting to examine the influence of gender on trait argumentativeness and on motivation to argue has produced inconsistent findings. This study sought to enhance our understanding of the role of sex in influencing perceptions of argumentative communication by examining the beliefs that people have about arguing. The utilization of a belief structure framework seems to have provided this enhancement.

The results of this study indicate that sex alone is not a good discriminator of beliefs about arguing. A statistically significant, but weak function, was produced when males and females were discriminated on the eight beliefs about arguing identified. The Hostility belief produced the most discriminating power to this function. Males believed that arguing is a less hostile and aggressive communication act than females. However, one must employ caution when interpreting this finding since less than nine percent of the variance was accounted for in this function.

The inclusion of trait argumentativeness along with sex greatly enhanced the separation of the groups. Two significant functions were produced.

The Cultivation function is primarily influenced by the belief about arguing as information acquisition and dissemination (Learning). The second function was primarily influenced by Situational and Hostility beliefs and was labelled Antagonism. This represents beliefs about arguing as a communication act inextricably bound to situational factors, but an act where aggressiveness, combativeness and emotional intensity are the most salient characteristics of the act.

On the Cultivation function, the separation of the groups was more pronounced based on the trait of argumentativeness rather than by sex. Very little difference seems to exist between males and females in their beliefs about arguing as a learning encounter. The greatest contrast appears to exist between individuals high and low in trait argumentativeness regardless of sex. Highly argumentative individuals tend to believe that arguing promotes information acquisition and dissemination, while low argumentative individuals do not share as strongly in this belief. A slight separation was also observed on the Cultivation function based on sex. Low argumentative males view arguing as more of a learning encounter than low argumentative females.

The Antagonism function also produced a significant, yet much weaker, separation among the four gender-based argumentative groups. This separation was primarily based on sex. In general, males viewed arguing as a less hostile and aggressive communication act than did females. It is important to note, however, that high argumentative males and females did not differ with regard to this belief about arguing. This finding suggests that as with the Cultivation function, the influence of trait argumentativeness is rather strong. While males and females in general are differentiated on the belief about arguing as a hostile and aggressive communication act,

individuals high in the trait regardless of sex are not.

One implication of this study is that sex alone is not the best way to differentiate individuals regarding beliefs about arguing. The influence of the trait predisposition seems most powerful in influencing beliefs about argumentative communication. Thus, merely investigating "sex differences" will do little to clarify our understanding of the influence of gender in this important and frequent communication activity.

Another outcome of this investigation is the apparent profitability of examining beliefs that individuals hold regarding arguing. Previous research primarily treated trait argumentativeness as a dependent measure and assessed the influence several independent factors (e.g., sex, sex-role orientation) have on it. This study went further by examining the beliefs that control the predisposition.

As attempts are being made to promote the use of effective argument in resolving controversy and gaining social influence, and as programs are being designed to enhance individuals motivation to argue, it is important to recognize the beliefs people hold about this ubiquitous form of communication. This study has contributed to that emerging body of research.

Table 1

Canonical Discriminant Functions

Individuals Classified by Gender

Function	Eigenvalue	Canonical R	Canonical R^2	Wilks' lambda
I	.09582	.2957	.087	.9125

Table 2

Standardized Canonical Discriminant Function Coefficients

BELIEF CATEGORIES	Discriminant Function: ANTAGONISM
Hostility	.75130
Control/Dominance	.46737
Self-Image	.49451
Situational	.31517

Table 3

Group Centroids in Discriminant Space

	Function I: ANTAGONISM
GROUPS	
Males	-.3852
Females	.2476

Table 4

Summary Statistics of Canonical Discriminant Functions

Individuals Classified by Gender and Trait Argumentativeness

Rank-Ordered Functions	Eigenvalue	Relative % of Variance	Canonical R	Canonical R^2	Wilks' lambda
I	.5693	81.00	.6023	.36	.5604
II	.0989	14.08	.3001	.09	.8795

Table 5

F-Ratio Matrix, Pairwise Group Contrasts

Conjoint Effects of the Two Canonical Discriminant Functions

Group	1(Males, low ARG)	2	3
2(Males, high ARG)	9.1919*		
3(Females, low ARG)	3.6864*	15.979*	
4(Females, high ARG)	8.8172*	1.9550	13.705*

*$p < .001$, $df=7,275$

Table 6

Standardized Canonical Discriminant Function Coefficients

	DISCRIMINANT FUNCTIONS	
	I	II
BELIEF CATEGORIES		
Hostility	-.3676	.5761*
Activity/Process	.4100*	.3430
Control/Dominance	.1730	.4069
Self-Image	-.0551	.4176
Learning	.9335*	.2197
Skill	.2817	-.0887
Situational	-.1517	.5850*

Discriminant Function I: Cultivation

Discriminant Function II: Antagonism

*=variables with the greatest relative power to distinguish the groups.

Table 7

Group Centroids in Discriminant Space

	DISCRIMINANT FUNCTIONS	
	I	II
GROUPS		
Low Argumentative Males	-.62605	.66075
High Argumentative Males	.84986	-.14431
Low Argumentative Females	-.83457	.23657
High Argumentative Females	-.61220	.17201

Discriminant Function I: Cultivation

Discriminant Function II: Antagonism

End Notes

1. Scotts (1955) pi formula employed to test coding reliability was:

$$\pi = \frac{P_o - P_e}{1 - P_e}$$

where P_o are the observed co-occurences, and P_e are the expected co-occurences.

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